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draft-ietf-mboned-lightweight-igmpv3-mldv2

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Major Idea of LW draft

• Principle:
  - Removal of rarely used EXCLUDE (S,G) operation
  - Assurance of compatibility with full version

• Method:
  - Host side: Reducing report type relating to EXCLUDE(S,G)
  - Router side: Eliminate filter-mode and simplify processing
**LW Message Type Evolution**

<table>
<thead>
<tr>
<th></th>
<th>IGMPv3</th>
<th>LW Ver-00</th>
<th>LW Ver-01</th>
<th>LW Ver-02</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In response to query</strong></td>
<td>IS_IN(S,G)</td>
<td>IS_IN(S,G)</td>
<td>ALLOW(S,G)</td>
<td>ALLOW(S,G)</td>
</tr>
<tr>
<td>IS_EX(S,G)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS_EX(null,G)</td>
<td>IS_EX(null,G)</td>
<td></td>
<td>IS_EX(null,G)</td>
<td>TO_EX(null,G)</td>
</tr>
<tr>
<td><strong>Interface state change</strong></td>
<td>TO_IN(S,G)</td>
<td>TO_IN(S,G)</td>
<td>TO_IN(S,G)</td>
<td>TO_IN(S,G)</td>
</tr>
<tr>
<td>TO_IN(null,G)</td>
<td>TO_IN(null,G)</td>
<td></td>
<td>TO_IN(null,G)</td>
<td>TO_IN(null,G)</td>
</tr>
<tr>
<td>TO_EX(S,G)</td>
<td>IS_EX(null,G)</td>
<td></td>
<td>IS_EX(null,G)</td>
<td>TO_EX(null,G)</td>
</tr>
<tr>
<td>TO_EX(null,G)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Source list change</strong></td>
<td>ALLOW(S,G)</td>
<td>ALLOW(S,G)</td>
<td>ALLOW(S,G)</td>
<td>ALLOW(S,G)</td>
</tr>
<tr>
<td>BLOCK(S,G)</td>
<td>BLOCK(S,G)</td>
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<td>BLOCK(S,G)</td>
<td>BLOCK(S,G)</td>
</tr>
</tbody>
</table>

- The evolution lies in further simplification of message types
LW Router-Side Evolution

• Version -00
  – Remove filter-mode on router side and simplify greatly correlative operation
  – Simplify source record list operation

• Version -01
  – Editorial Improvement

• Version -02
  – Increase more detailed description of protocol behavior
Router Side Performance Test Result

• LW-IGMPv3 improves element operation rate:
  – Theoretical analysis: by around 40%
  – Actual simulation result: by 30% average

• LW-IGMPv3 decrease memory occupation by 12.5%

• Router has better stability with LW-IGMPv3 when user number increases

Thanks for BUPT (Beijing University of Posts and Telecommunications) for the simulation test
History of The Draft

- **IETF 66, Montreal**
  - `draft-liu-magma-igmpv3-mldv2-lite-00.txt`
  - Individual draft, first discussion
- **IETF 67, San Diego**
  - `draft-liu-magma-igmpv3-mldv2-lite-02.txt`
  - Add Host side process, change “Lite” to “Light Weight”
- **IETF 68, Prague**
  - `draft-ietf-mboned-lightweight-igmpv3-mldv2-00`
  - Accepted as WG draft, began to prepare implementations
- **IETF 69, Chicago**
  - `draft-ietf-mboned-lightweight-igmpv3-mldv2-01`
  - Router side and host side implementation available
- **IETF 70, Vancouver**
  - `draft-ietf-mboned-lightweight-igmpv3-mldv2-02`
  - Compatibility test result is given
Future Plan

• Draft editorial improvement

• Publish of the Open Source Code

• Initiate LC Process
Thanks !